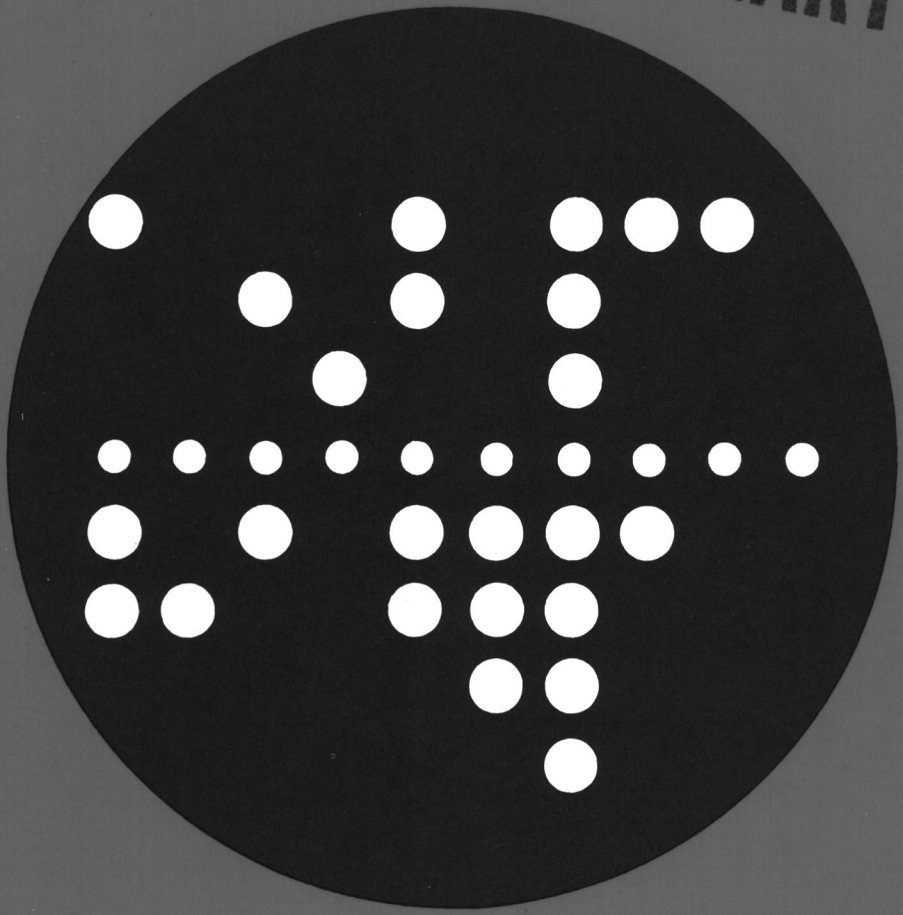
COMPUTING CENTRE NEWSLETTER

March 1981 - N. **49**



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EDITORIAL NOTE

The Computing Centre Newsletter is published monthly except for August and December.

It describes developments, modifications and specific topics in relation to the use of the computing installations of the Joint Research Centre, Ispra Establishment.

The aim of the Newsletter is to provide information of importance to the users of the computing installations, in a form which is both interesting and readable.

The Newsletter also includes articles which are of intellectual and educational value in order to keep the users informed of new advances in computer science topics.

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21020-ISPRA (Varese)
Italy

INFORMATICS COURSES FOR 1981

M. Dowell

Introduction

In 1980 a series of informatics courses were organized by EFIS in conjunction with Computing Centre. In total over 60 days courses were given in 1980.
In particular, two editions of the "Programming Techniques" course were given with almost 40 participants at each course. Over 3500 man/hours of instruction was given during these courses.
For 1981 another impressive series of courses has been arranged by EFIS (and is already in progress).
In this article a brief summary of the courses is given.
Further information may be obtained from EFIS, Ed. 36c or from Mrs. A. Cambon in the Computing Support Library.

Details of Courses

Courses Already Given

ADABAS - Introduction (16th-20th February 1981)
Q.E.D. Editor (16th-17th March 1981)

Courses Planned for the Remainder of 1981

1. ADABAS II

October 26-30,1981

A methodological approach to choice of database structure and the development of a database.

2. Graphics Facilities of the Central Computing Service

June 25-26,1981

Details of how to use the graphics facilities of the Central Computing Service. The course will include details of how to use all of the available facilities from simple lineprinter graphics to the complex drawing of projections of three-dimensional objects. Details of how to produce graphical output on: interactive graphics terminals, the Gould electrostatic plotter and the Benson penplotter will be given.

3. Mathematical Libraries

October 12-13,1981

Information on how to use the NAG & IMSL mathematical libraries both in batch and TSO will be presented. Also, a comparative summary of the content of the two libraries will be given.

4. TSO Course

April 27-30,1981 [provisional]

This will be a repetition of the "condensed" introduction to TSO course given in 1979 (see Newsletter N. 30, pages 11,12,13 for further details).

5. COBOL

Introduction October 5-9,1981 [provisional]

Advanced November 9-13,1981 [provisional]

An introduction to, and then the advanced features of, the programming language COBOL.

6. FORTRAN

Level I: September 28-October 2,1981 * [provisional]

Level II: November 23-27,1981 * [provisional]

This series of lectures will describe the FORTRAN IV language.
Part I will deal with the commonly used features.
In part II more advanced features will be described.
The course will not be specifically oriented to the FORTRAN available on the AMDAHL 470/V7A but some references will be made to IBM compiler dependent features. The course is a repetition of the 1980 course.
(* Note. If there is sufficient demand for this course it will be given on approximately the dates defined. However, in the event of the availability of the new FORTRAN 77 compiler, a version of the course describing the FORTRAN 77 facilities will be given at the appropriate time).

7. JCL Language

May 5-6, 11-12, 18-19,1981 [provisional]

This course will give a full description of the JCL facilities available on the AMDAHL 470/V7A at Ispra. This course will be of considerable value to users of the Central Computer Service.
(Note this is a repetition of the 1980 JCL course).

8. BASIC II

May 20-22,1981

This course is a continuation of the course given in 1980 and is primarly intended for persons who attended the BASIC I course.

9. PASCAL

(dates to be fixed [end of 1981])

An introduction to the facilities of the PASCAL programming language.

10. NASTRAN

April 8-10,1981

NASTRAN is a system that will create and manipulate a data base to solve problems using matrix structural analysis.
This three days course gives an introduction to the use of the system (which is available on the JRC Central Computing Service).
[Further information about the system or the course may be obtained from Mr. H. I. de Wolde or Mr. A. Inzaghi (see list at the end of the Newsletter for telephone numbers)].

This series of courses offers, to members of the JRC, the opportunity to increase their expertise in certain areas of computer science. This should in turn enable them to make more effective use of the computing facilities available within the JRC.

TSO CONDENSE COMMAND

M. Dowell

A new TSO command has been recently introduced for TSO users. This command is named CONDENSE and it is similar to the COMPRESS command (described in Newsletter N. 41, pages 13 & 14). The CONDENSE command does, however, have an advantage over the COMPRESS command. With CONDENSE, if after the "compressing" action there are totally empty secondary extents in the partitioned data set, then these totally unused extents are released. Thus, it is possible to save considerable amounts of disk space. Of course the last (partially used) extent is not released and nor is the primary allocated space.

Detailed Description of the Command

```
CONDENSE   dsname
```

where dsname is the only (but mandatory) operand.
dsname is the name of the partitioned dataset to be compressed.

Note 1

The CONDENSE command uses the file SYSPRINT for diagnostic messages. Therefore, SYSPRINT must be allocated to either a data set or the terminal. Some logon procedures (e.g. totlog) already perform this allocation. Others, however, (such as fg1log) do not perform the allocation and an explicit use of the ALLOC command is necessary (see example 3).

Note 2

CONDENSE (as COMPRESS) is only valid for Partitioned Organized (PO) data sets. It should not be used with any other type of data set.

Example 1

Successful run within logon procedure totlog (which allocates SYSPRINT to the terminal)

```
IKJ5401A ENTER LOGON -
logon tsoabc/passw proc(totlog)
TSOABC LOGON IN PROGRESS AT 05:30:00 ON APRIL 1, 1981
.
.
READY
condense job.clist

                                PDSQUISH-DIRECT ACCESS UTILITY
        TIME-08.52              UOU - 71.180                    WED, APR. 01, 1981              PAGE    1
                CONDENSE  DDNAME-PDSCOM
        PDS034I           TRKS USED-    3   TOTAL TRACKS-    3 EXTENTS - 3  SEC EXTENT SIZE-   20 REC
        PDS030I           DATA SET IS CONDENSED

        PDS031I           PDSQUISH-END OF JOB
READY
```

Example 2

Unsuccessful attempt to use CONDENSE with fg1log (which does not allocate SYSPRINT)

```
condense job.cntl
CONDENSE ENDED DUE TO ERROR+
PDSQUISH - UNABLE TO OPEN SYSPRINT
READY
```

Example 3

Successful use of CONDENSE with fg1log (following the allocation of SYSPRINT to the terminal)

```
IKJ5401A ENTER LOGON -
logon tsoabc/passw proc(fg1log)
TSOABC LOGON IN PROGRESS AT 23:59:59 ON APRIL 1, 1981
.
.
READY
alloc f(sysprint) da(*)
READY
condense job.clist

                                PDSQUISH-DIRECT ACCESS UTILITY
        TIME-16.03              UOU - 71.180                    TUE, MAR. 31, 1981              PAGE    1
                CONDENSE  DDNAME-PDSCOM
        PDS034I           TRKS USED-    3   TOTAL TRACKS-    3 EXTENTS - 3  SEC EXTENT SIZE-   20 REC
        PDS030I           DATA SET IS CONDENSED

        PDS031I           PDSQUISH-END OF JOB
READY
```

SUMMARY OF NEWSLETTER ARTICLES

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4	Acquisition, Manipulation et Stockage de l'information	J. Pire
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5	Catalogued procedure PLPCLGS	C.L. van den Muyzenberg
7	IMS - Rules for Application	A. Borella
13	The Operating System OS/MVT: An Overview	D. König, P. Moinil
20	"Tuning" de la strategie d'exploitation	J. Pire
28	Computing Centre Information (Errata Corrige in N. 36)	M. Dowell
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35	Using Computercards is Wrong	H.I.de Wolde
35	Present Availability of PASCAL Compiler	A.A.Pollicini
35	Installation Notes	
37	Job Card Updating for 1980	M.Dowell
37	Support to Computing and Computing Advisory Service	H.I.de Wolde
37	Attachment of Hard-copy Printers to Hazeltine Terminals	M.Dowell
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40	Internal Network - SOLAR "Self-Service" System (Errata Corrige in N. 43)	M.Dowell
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24	Note to all TSO Users	C.Daolio, A.Rink
24	New TSO Data Management Commands: CONCAT,DECON,and FREEALL	C.Daolio, A.Rink
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45	TSO HELP	M.Dowell
45	QED Notes(2) (Errata Corrige in N. 46)	M.Dowell
46	QED Notes(3)	M.Dowell
47	Informatics Support Sector	H.I.de Wolde
47	Test Procedure for Teleprocessing Connections	F.Sorel
47	QED Notes(4)	M.Dowell

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8	Software portability - An Introduction to the Problem	A.A. Pollicini
13	Testing by Assertions	H. Fangmeyer, K. Hanke, C.L. van den Muyzenberg
18	Programming Foundations	W. Boettcher, R. Jaarsma, A.A. Pollicini
23	An Introduction to Modular Systems	G. Gaggero
24	International Summer School on Program Construction	M. Barnreiter
27	Basic Requirements for a Modern Integrated Modular System for Engineering	G. Gaggero
37	Exploitation "Unattended"	J.Pire

STATISTICS OF COMPUTING INSTALLATION UTILIZATION
REPORT OF COMPUTING INSTALLATION EXPLOITATION
FOR THE MONTH OF FEBRUARY 1981.

	YEAR 1980	YEAR 1981
General		
Number of working days	21 d	20 d
Work hours from 8.00 to 24.00 for	16.00h	16.00h
Duration of scheduled maintenance	17.37h	15.84h
Duration of unexpected maintenance	13.00h	3.34h**
Total maintenance time	30.37h	19.18h
Total exploitation time	359.63h+	313.82h++
CPU time in problem mode	235.20h	354.88h*
Batch Processing		
Number of jobs	8151	8079
Number of cards input	1434000	605500
Number of lines printed	30450000	27875000
Number of cards punched	152000	32000
CPU time	210.63h	301.24h*
Number of I/O (Disk)	24252000	29637000
Number of I/O (Magnetic tape)	4151000	3915000
T.S.O		
Number of LOGON's	6771	4775
Number of messages sent by terminals	270500	343000
Number of messages received by terminals	1380000	2343350
CPU time	21.82h	42.99h*
Number of I/O (Disk)	3343000	4485900
Connect time	2696.80h	3248.31h
ADABAS		
Total time service is available	-	182.04h
CPU time	-	8.22h*
Number of I/O (Disk)	-	3295000
IMS		
Total time service is available	125.18h	128.01h
CPU time	2.75h	2.43h*
Number of I/O (Disk)	523400	557500

* Real CPU has been multiplied by a factor of 2 to indicate the increased throughput of the AMDAHL.

** Covering all the configuration.

\+ Including 54.00hrs overtime.

++ Including 13.00hrs overtime.

UTILIZATION OF COMPUTING CENTRE BY OBJECTIVES & APPROPRIATION ACCOUNTS FOR THE MONTH OF FEBRUARY 1981.

		AMDAHL 470/V7A equivalent time in hours
33001	Reactor Safety	365.36
33002	Plutonium Fuel and Actinide Research	-
33003	Safety of Nuclear Materials	6.35
33004	Fissile Materials Control and Management	22.40
33005	Super-SARA Test Programme SSTP	34.87
33011	Solar Energy	3.67
33012	Hydrogen Production, Energy Storage and Transport	0.16
33013	Thermonuclear Fusion Technology	83.75
33014	High Temperature Materials	1.24
33021	Protection of the Environment	22.93
33022	Remote Sensing from Space	3.83
33041	Informatics	43.57
33043	Support to the Community Bureau of References	2.45
33044	Training and Education	-
33046	Provision of Scientific and Technical Services	14.00
1.20.1 1.20.2	General Administration - JRC General Services - Administration - Ispra	80.40
1.20.3	General Services - Technical - Ispra	1.96
1.30.3	Central Workshop Ispra	0.89
1.40.2	ESSOR	0.91
	TOTAL	688.74
1.94.0	Services to External Users	6.94
	TOTAL	695.68

BATCH PROCESSING DISTRIBUTED BY REQUESTED CORE MEMORY SIZE

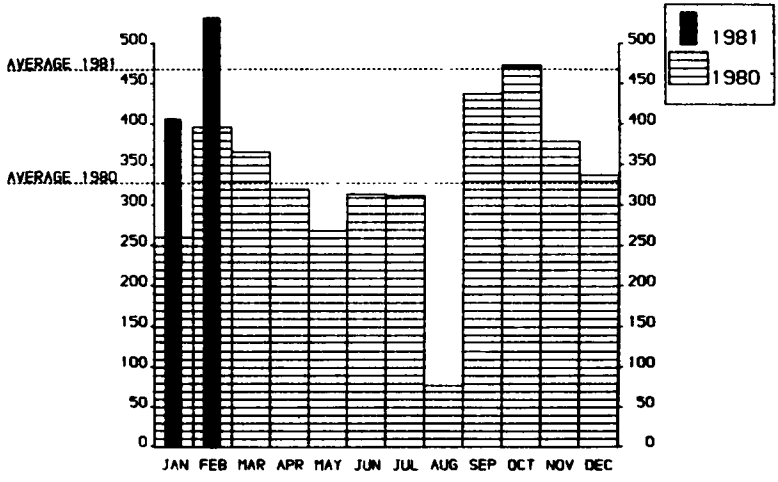
	100 k	200 k	300 k	400 k	600 k	800 k	1000 k	1200 k	1400 k	>1400 k
No. of jobs	2150	2039	1285	1263	622	147	64	64	31	25
Elapsed time	65	155	286	226	218	81	38	52	23	12
CPU time	3.0	21.6	101	32.8	80.2	26.1	11.5	13.8	6.5	4.6
"Equiv" time	21	52	133	83	102	38	16	23	11	9
"Turn" time	0.5	1.2	3.4	3.4	4.5	4.5	5.1	3.0	3.5	7.5
I/O (disk)	1654	4127	4471	6762	3077	1749	593	1343	588	576
I/O (tape)	2015	513	169	960	161	4	45	4	5	-

NOTE.
All times are in hours.
"Equiv" means equivalent.
"Turn" means turn around.
All I/O transfers are measured in 1000's.

PERCENTAGE OF JOBS FINISHED IN LESS THAN:

TIME	15mn	30mn	1hr	2hrs	4hrs	8hrs	1day	2day	3day	6day
%year 1980	26	39	51	63	75	87	96	99.2	100	100
%year 1981	29	44	57	69	82	91	97	100	100	100

HISTOGRAM OF TOTAL EQUIVALENT TIME(HRS)



Projected total for 1981 = 5625 hours(using average)

Total for 1980 was = 3936 hours

REFERENCES TO THE PERSONNEL/FUNCTIONS OF THE COMPUTING CENTRE

			Room	Tele.
Manager of The Computing Centre		J.Pire		
Responsible for User Registration	Ms.	G.Rambs		
Operations Sector				
Responsible for the Computer Room		A.Binda-Rossetti		
Substituted in case of abscence by:				
Responsible for Peripherals		G.Nocera		
Systems Software Sector				
Responsible for the sector		D.König		
Substituted in case of abscence by:		P.A.Moinil		
Responsible for TSO Registration		C.Daolio		
Informatics Support Sector				
Responsible for the Sector	(f.f.)	H.de Wolde	1883	787
Secretary	Mrs.	G.Hudry	1873	787
Responsible for User Support		M.Dowell	1886	701
General Inf./Support Library	Mrs.	A.Cambon	1871	730
Advisory Service/List of Consultants (See Note 1)			1870	730

A.Inzaghi, A.A.Pollicini, H.I. de Wolde, R.Meelhuysen, M.Dowell

NOTE 1. The advisory service is available in the same room as the Computing Support Library (room 1870). Exact details of the advisory service times for a specific week can be found at the head of any output listing (for that week).
Any informatics problem may be raised. However, the service is not designed to help users with problems which are their sole responsibility. For example, debugging of the logic of programs and requests for information which can easily be retrieved from available documentation.
If necessary, other competent personnel from the informatics division may be contacted by the consultant but not directly by the users.
The users should only contact the person who is the consultant for that specific day and only during the specified hours.
Outside the specified hours general information may be requested from Mrs. A. Cambon in the Computing Support Library.

HOW TO OBTAIN COMPUTING CENTRE DOCUMENTATION

Persons interested in receiving copies of the Computing Centre "green books" or in receiving regularly the "Computing Centre Newsletter" are requested to complete the appropriate part of the following form and send it to :-

Ms. A. Cambon

Support To Computing

Building 36

Tel. 730.

Indicate with a (✓) which options are required.

Please add my name to Newsletter mailing list ( )

Please send me copies of the following "green books":

JRC-TSO Primer ( )

JRC Computer Graphics (new version) ( )

Towards a New Programming Style ( )

LIBRARIAN ( )

NAME .....

ADDRESS .....

.....

.....

TELEPHONE .....